

REMARKS

The Abstract of the Disclosure has been objected to for the reasons set forth in paragraph 2 of the Examiner's Office Action. As the Examiner will note, the Abstract of the Disclosure has been amended to eliminate the language objected to by the Examiner and, accordingly, it is believed that this objection has been eliminated.

The use of the term "Iglidur X" on pages 8 and 14 of the specification has been objected to since these expressions should be presented with capital letters to properly identify the expressions as a trademark. Accordingly, the specification has been amended as suggested by the Examiner and, thus, it is believed that this objection has been eliminated.

Claims 1-10 have been objected to for the reasons set forth in paragraph 5 of the Examiner's Office Action. As the Examiner will note, the claims have been amended as suggested by the Examiner and, thus, it is believed that the Examiner's objections have been eliminated.

Claims 1-9 have been rejected by the Examiner under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed. The Examiner will note claim 1 has been amended to specifically recite "a carriage" and, thus, it is

believed that this rejection has been eliminated. In addition, since claim 8 has been canceled in the present application, it is believed that the Examiner's objections to claim 8 have been eliminated.

Claims 1-6 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by Jadrich, GB 2306685 A. This rejection is respectfully traversed.

The present invention relates to an apparatus for guiding a printhead fixed on a carriage. The carriage is provided with plain bearings which are in sliding contact with a set of substantially parallel guide rods. A first plain bearing is in contact with a first guide rod and a second plain bearing is in contact with a second guide rod, the second plain bearing being movably fixed to the carriage by means of a resilient element. The present invention also relates to an inkjet printer provided with such an apparatus.

It should be noted by the Examiner that claim 1 has been amended such that it now recites that the first plain bearing in contact with the first guide rod is rigidly connected to the carriage and that the second plain bearing in contact with the second guide rod is movably connected to the carriage. The basis to this amendment can be found on page 11, lines 3-5, and page 12, lines 10-13. Also, these references to the specification of the present application provide an example of the plain bearing(s) with

respect to one guide rod, which is/are rigidly connected to the carriage, whereas the plain bearing(s) corresponding to the other rod is/are movably connected to the carriage. This construction has the advantage that it allows sufficient freedom of movement, while at the same time preventing the carriage from at least partially turning around in the plain formed by the two guide rods.

In the guiding means disclosed in the Jadrich reference (GB 2306685 A), however, the plain bearings of both guide rods are movably (resiliently) connected to the carriage. See, for example, Figures 8 and 9, which clearly show that all plain bearings are connected via a leaf spring to the carriage 17. Therefore, the carriage can rotate in the plane formed by the two guiding rods. This is to be distinguished from the present invention as recited in amended claim 1 of the present application. Accordingly, the guiding means as recited in claim 1, wherein the first guide rod is rigidly connected to the carriage, is certainly novel over the teachings of the Jadrich reference and, furthermore, it would not be considered obvious to change a resilient connection corresponding to the plain bearings of one of the guide rods to rigid connections without doing so in view of the Applicant's own disclosure. Clearly, the Jadrich reference teaches that all bearings (guide pad assemblies) should allow movement in all directions for appropriate compensation. (See page 16, lines 19-36, and in particular, lines 21-23 and 33-36.) Thus, in referring

to Figures 12-15, the Jadrich reference recites that there is illustrated therein various degrees of freedom in which the guide pad assemblies allows. These degrees of freedom allow the guide pad assemblies to self-align with the guide rod to which they are in contact, which minimizes wear over time. Also, as recited in lines 33-36, it is stated that the guide pad assemblies are originally in the Y and C direction, yet allow movement in all of the other directions for appropriate compensation, thus, providing an assembly which minimizes wear, which, in turn, would affect any artifacts with regard to focus positioning of the optical system and is insensitive to translator assembly buildup, which will provide a more predictable and robust design in addition to requiring less critical part tolerances. Thus, it is clear that the Jadrich reference does not even remotely contemplate the Applicant's inventive contribution. Claims 2-6 should also be allowable for the same reasons as stated above in connection with claim 1, since claims 2-6 are dependent from claim 1.

Claim 7 has been rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Jadrich in view of Ikeda et al., EP 1,201,448 A2. This rejection is respectfully traversed.

As the Examiner will note, original claim 1 has been amended to include the subject matter of claim 7 and it is believed that the combination of claims 1 and 7 are not obvious in view of the prior art relied upon by the Examiner. Although it can be argued

that the Ikeda reference teaches a bearing for a printer having two guide surfaces which contact a guide rod, it is the Applicant's position that it would not be obvious to one of ordinary skill in the art to provide the bearing as known from the Jadrich reference with two guide surfaces as known from the Ikeda et al. reference. Thus, Ikeda et al. shows a printer wherein the carriage 50 is supported by one single guide rod 81. In order to regulate the rotation of the carriage around this guide rod, the carriage is guided by rail 82 (see Figure 1), and page 4, lines 38-41. Because the carriage is supported by only one single guide rod, forces are exerted, such as when accelerating the carriage, to cause the corresponding bearing of the carriage to slide in a circumferential direction of the guide rod (see page 6, lines 24-26). The bearing portion is, thus, caused to slide in the circumferential direction, which in its turn, causes the carriage to float, and as a result, noise is generated and vibrations are not attenuated (see page 6, lines 29-33). In other words, the fact that there is only one guide rod causes the bearing under certain circumstances, to slide in the circumferential direction, which in its turn causes noise and nonattenuated vibrations. One skilled in the art would realize that the guiding assembly as known from the Jadrich reference does not suffer from this problem. The Jadrich guiding assembly uses two guide rods to slidably carry the carriage 17 (see, for example, Figure 9). As is clear from Figure 9, rotation of the carriage

around either one of the guide rods will not be present in the Jadrich apparatus. Therefore, there is no incentive when using the Jadrich apparatus to implement the solution as proposed by the Ikeda et al. reference to overcome the drawbacks of such rotation. Thus, it is believed that claim 7 as combined with original claim 1 is certainly not obvious over the prior art relied upon by the Examiner, either alone or in combination.

Claims 8 and 9 have been rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over the Jadrich reference. This rejection is respectfully traversed.

As the Examiner will note, claim 8 has been canceled from the present application. In addition, since claim 9 is dependent from claim 1, it is believed that claim 9 is patentable over the references relied upon by the Examiner for the same reasons as presented hereinabove in connection with claim 1.

It is noted with appreciation that, although claim 10 is objected to, this claim would be allowable if rewritten to overcome the objections raised by the Examiner in the Office Action letter. Since claim 10 has been amended to eliminate all of the formal objections raised by the Examiner, it is believed that claim 10 is also allowable. Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of all of the claims of the present application are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch (Reg. 22,463) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Joseph A. Kolasch, #22,463

JAK/jao
0142-0430P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachment(s) : Abstract of the Disclosure